UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/660,025	09/12/2000	Fabio M. Chiussi	21--9-8-5	5851

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LUCENT TECHNOLOGIES INC.
DOCKET ADMINISTRATOR
101 CRAWFORDS CORNER ROAD - ROOM 3J-219
HOLMDEL, NJ 07733

EXAMINER
JAIN, RAJ K

ART UNIT	PAPER NUMBER
2664	

DATE MAILED: 03/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/660,025	Applicant(s) CHIUSSI ET AL.
	Examiner Raj K. Jain	Art Unit 2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _09 December 2000_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-16_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _12/9/2000_ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _4_ .

4)☐ Interview Summary (PTO-413) Paper No(s). _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: .

DETAILED ACTION

Drawings

1.   The drawings are objected to because they lack a descriptive legend, Figs 1-7 and 10. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

2.   Claim 3 is objected to because of the following informalities: It shows a dependency on itself. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4.   Claim 12 recites the limitation "wherein said step" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who

has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Elwalid et al (US Pat 5,978,356).

Regarding claim 1, Elwalid discloses a traffic shaping system which increases the connection-carrying capacity of a network node by shaping the data cells to increase the admissible number of connections. The traffic shaping system uses a data buffer at the ingress of the network node to selectively buffer classes of data cells. An integrated regulator and shaper is provided which concurrently regulates and shapes the traffic cells to increase the nodal connection-carrying capacity, see Figs 1-3, 12 and abstract and cols 1-2. The traffic flows are aggregated into a component traffic stream and aggregate stream, see claims 1, 12 and 14. A single FIFO queue (20) is provided for multiplexing several traffic streams of capacity B, which is serviced by a trunk of capacity, i.e., bandwidth, C. Furthermore, the shaper 28 is designed taking into account the parameters for the DLBR 16. These parameters reflect the class or quality of service agreed upon between the user and the network service provider. The network service provider can exploit differences between the traffic classes, such as differences in delay sensitivity, to increase nodal connection capacity by selectively shaping data packets which

different delay tolerances. Although Elwalid does not disclose the use of backpressure scheme on the traffic streams of interest, examiners takes official notice that the use of backpressure signaling to control congestion within a network is well known in the art and one can easily include such signaling for respective purpose of reducing congestion within links and queues. In practice, a backpressure signal (BP) can be generated and sent to input adapters when switch/buffer congestion is detected; that is, when the shared memory is full or the intended output queue is full, furthermore backpressure can be applied selectively to each delay priority of given queues.

Regarding claim 2, Elwalid discloses QoS for the traffic flows of interest, see Fig 2 and 3 and col 5 lines 49-col 6 line 5.

Regarding claim 3, Elwalid discloses aggregating of traffic streams based on per flow of VC's and inherently destination, see cols 1-2.

Regarding claim 4, Elwalid discloses shaping of data packets with delay tolerances **if so desired** by the network service provider, and therefore the network provider may also choose to opt the delay of data packets, see col 4 lines 27-40 and col 6 lines 21-43.

Regarding claim 5, Elwalid discloses a single FIFO queue (20), see Figs 2 and 3.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elwalid et al (US Pat 5,978,356) in view of Chen et al (US Pat 6,188,674 B1). Elwalid discloses a traffic shaping system which increases the connection-carrying capacity of a network node by shaping the data cells to increase the admissible number of connections. The traffic shaping system uses a data buffer at the ingress of the network node to selectively buffer classes of data cells. An integrated regulator and shaper is provided which concurrently regulates and shapes the traffic cells to increase the nodal connection-carrying capacity, see Figs 1-3, 12 and abstract and cols 1-2. The traffic flows are aggregated into a component traffic stream and aggregate stream, see claims 1, 12 and 14. Elwalid does not disclose the use of a credit counter for each component traffic stream that initializes, decrements, increments and resets the said counter as appropriate. Chen discloses the use of a credit counter for each component traffic stream that initializes, decrements, increments and resets the said counter as appropriate, see abstract and col 2 line 47-col 3 line 25. Chen describes a method for packet loss measurement in high-speed switches by identifying traffic flows in the ingress side of switches, and measuring packets losses for the identified flows on the egress side of the switches. On the egress side, the packet flow is monitored and the packets are counted using the block size as a counting modulo. The value of this counter at the receipt of a marked packets is used to update the number of packets that do not make their way across the switch, see fig 1 and abstract. The traffic flow in Chen can be defined in different ways, and at various degrees of granularity, depending on the user desires, or requirements, see col 2 line 47-col 4 line 40. The packet flow scheme of Chen provides an ongoing update of how many packets have been lost within a switch or node and further to prevent overflow of same switch/node and thus reducing further packet loss and increasing link

effieciency. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the packet counter scheme of Chen within Elwalid so as to reduce packet loss for links of interest and increasing link effieciency.

Claims 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elwalid et al (US Pat 5,978,356) in view of Chen et al (US Pat 6,188,674 B1) and further in view of Brown et al (US Pat 6,075,772).

Regarding claim 9, Elwalid discloses a traffic shaping system which increases the connection-carrying capacity of a network node by shaping the data cells to increase the admissible number of connections. The traffic shaping system uses a data buffer at the ingress of the network node to selectively buffer classes of data cells. An integrated regulator and shaper is provided which concurrently regulates and shapes the traffic cells to increase the nodal connection-carrying capacity, see Figs 1-3, 12 and abstract and cols 1-2. The traffic flows are aggregated into a component traffic stream and aggregate stream, see claims 1, 12 and 14. Elwalid does not disclose the use of a credit counter for each component traffic stream that initializes, decrements, increments and resets the said counter as appropriate. Chen discloses the use of a credit counter for each component traffic stream that initializes, decrements, increments and resets the said counter as appropriate, see abstract and col 2 line 47- col 3 line 25. Chen describes a method for packet loss measurement in high-speed switches by identifying traffic flows in the ingress side of switches, and measuring packets losses for the identified flows on the egress side of the switches. On the egress side, the packet flow is monitored and the packets are counted using the block size as a counting modulo. The value of this counter at the receipt of a

marked packets is used to update the number of packets that do not make their way across the switch, see fig 1 and abstract. Elwalid and Chen do not disclose guaranteed bandwidth traffic and/or best effort traffic. Brown discloses data control through a communications system via communications adapter having at least one guaranteed bandwidth connection and a best effort connection, see Fig 2 and abstract and claims. The use of both the best effort buffer and a guaranteed bandwidth buffer increases control to provide for fair sharing of resources, therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Elwalid's traffic shaper to adapt to having both a best effort queue and a guaranteed bandwidth queue so as to better control network resources through fair sharing of allocated bandwidth for each data stream.

Regarding claim 10, Chen discloses the use of counter, reasons for combining with Brown and Elwalid are same as above.

Regarding claims 11 and 13-16, Brown discloses data control through a communications system via communications adapter having at least one guaranteed bandwidth connection and a best effort connection, see Fig 2 and abstract . A backpressure signal (BP) can be generated and sent to input adapters when switch/buffer congestion is detected; that is, when the shared memory is full or the intended output queue is full, furthermore backpressure can be applied selectively to each delay priority of given queues of interest and therefore can be applied to best effort queue if so desired. Combining of Brown with Elwalid is similar for reasons cited above.

Regarding claim 12 and 14, Chen discloses the counter scheme as discussed and therefore again combining Chen within Elwalid helps to reduce packet loss for links of interest and increases link effieciency.
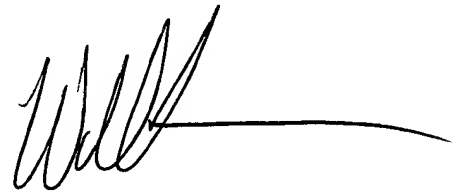
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raj Jain whose telephone number is 703-305-5652. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 703-305-4366. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

RJ
February 25, 2004

WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600